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A NEW SPECIES OF *PLAGIOMIMICUS* GROTE (NOCTUIDAE: STIRIINAE) FROM NORTHERN ARIZONA AND SOUTHEASTERN UTAH

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ABSTRACT. *Plagiomimicus kathyae* Adams (Noctuidae: Stiriinae) is described from 11 specimens collected at Cameron, Coconino Co., Arizona and Moab, Grand Co., Utah in September of 1995 and August/September of 1996. Adults and genitalia of *P. kathyae* and the similar *P. hilli* (Barnes & Benjamin) are illustrated, and the differences between the species are discussed.

Additional key words: fall flight time

During a trip through parts of the western United States in early September of 1995, James K. Adams (JKA) collected a specimen of a pale olive-yellow stiriine noctuid in Moab, Grand Co., Utah. A few days later, more specimens of the same species were collected in Cameron, Coconino Co., Arizona. A similar trip in late August/early September 1996 produced one more individual in Moab, UT and a few more in Cameron, AZ. A specimen was later sent to Eric Quinter, at the time on staff at the American Museum of Natural History (AMNH) in New York City, in an attempt to identify the species. Eric Quinter returned the specimen to JKA with the indication that, although clearly stiriine, the species was unknown to him and there were no comparable specimens in the AMNH.

In March of 2000, JKA took several specimens to the Smithsonian Institution in Washington, D.C., in a further attempt at identification. Although similar in appearance to *Plagiomimicus hilli* (Barnes & Benjamin), the specimens are generally smaller than *P. hilli*, and the wing patterns on the two species are a bit different. As with the AMNH, there were no specimens of the species in question in the Smithsonian collection. Pictures of the species sent electronically to many noctuid enthusiasts also failed to uncover any other individuals of this moth, and the species is unknown from southeastern Arizona (Bruce Walsh pers. comm.). In 2005, JKA passed specimens to Don Lafontaine at the Canadian National Collection (CNC), who confirmed that the species in question was undescribed. In this paper, the new species is described, and differences with the apparently closely related *P. hilli* are discussed.

Plagiomimicus kathyae Adams **sp. nov.**

Diagnosis. *Plagiomimicus kathyae*, although similar to *P. hilli*, is quite distinct from *P. hilli* in size, maculation, and genitalic features. The smaller *Plagiomimicus kathyae* has a forewing (FW) length ranging from 11.3mm (smallest male) to 12.4mm (largest female) [mean = 11.77mm; n=11], whereas *P. hilli* has a FW length from 12.6 to 13.2mm [mean = 12.95mm; n=15]; the mean length reported for *P. hilli* in Poole (1995) is 13.04mm [n=10]. The forewing maculation, although obscure in both species, is abundantly different between *hilli* and *kathyae*. The white subterminal (ST) line is always visible, complete, and even in *P. kathyae*; the ST line is at best partial and indistinct to absent in *P. hilli*, and when it is evident it is irregular and ragged. The white antemedial (AM) and postmedial (PM) lines, which have suffused edges in both species, are distinctly thinner in *P. kathyae*, with the AM line completely absent in some specimens of *P. kathyae* (but always present in *P. hilli*). The PM line in *P. kathyae* follows a course that is more angled outward toward the apex than in *P. hilli* (compare Fig. 1 and Fig. 3). When the AM line is present in *P. kathyae*, the angled PM line and AM line together appear like a "V"; in *P. hilli*, the two lines run nearly parallel. The male abdomen of *P. hilli* has an unusual and reportedly unique for the genus (Poole, 1995) sclerotization of the sixth, seventh and eighth terga, with the posterior apex of the seventh sternum in particular heavily sclerotized. Male *P. kathyae* have a similar strongly sclerotized ridge on the posterior edge of the seventh tergum (somewhat visible in Fig. 3), and a small sclerotized U-shaped ridge on the anterior edge of the eighth. There is no

sclerotization on the sixth tergum in males of *P. kathyae*.

The male genitalia of *P. kathyae* (Figs. 7, 8) differ from those of *P. hilli* (Figs. 5, 6) in several respects. The valves in both species are broad, but the ampulla in *P. kathyae* is 4/3 proportionally longer in relation to valve (16% of valve length) than for *P. hilli* (12% of valve length). The triangular saccus appears pinched at the point of attachment to the vinculum in *P. kathyae*, but the saccular margins blend smoothly into the vinculum in *P. hilli*. The aedeagus is proportionally longer and thinner (4.4× as long as wide) in *P. kathyae* (3.5× as long as wide in *P. hilli*), a difference clearly visible in Figures 6 & 8. The vesica of *P. kathyae* lacks a subbasal pouch (present in *P. hilli*). In the female genitalia of *P. kathyae* (Fig. 10), the corpus bursae is proportionally broader and significantly less sclerotized than in *P. hilli* (Fig. 9); the corpus bursae is also mesially constricted in *P. kathyae*. The anal papillae are also slightly longer proportionally and more pointed in *P. kathyae*. Indeed, the long, thin, heavily sclerotized anal papillae are easily visible in female specimens of *P. kathyae*, without any brushing of scales from the genitalia.

Description. Most features typical for genus (Poole 1995: 86) except where noted. Males and females of *P. kathyae* very similar in overall appearance; female slightly larger and slightly darker than male and with slightly more dusting of olive-gray scales on the hind wing (HW).

Vestiture: cream in male, olive buff in female; vestiture of head, thorax, legs, and abdomen largely concolorous. Scales of meso- and metanotum, and posterior end of tegulae two-toned, with light brown bases and cream colored tips. Scales on dorsum of abdomen slightly darker than on rest of body.

Head: Antennae simple in both sexes, scaled with cream colored scales along dorsum, finely ciliate ventrally. Eyes naked. Frontal protuberance on head nearly round and very large (takes up almost all of frons); protuberance with a strongly sclerotized, raised rim, with a small projection ventrally, and a similar, smaller projection dorsally; center of frontal protuberance with raised "cone," notched ventrally. Labial palps as for genus (Poole 1995: 87), with heavily scaled basal and second segments; short, stout third segment barely protrudes beyond coiled proboscis.

Thorax: Apex of tibia of prothoracic leg with heavily sclerotized sharply pointed spine-like seta approximately one-half length of first tarsal segment; other legs as for genus. *Forewing:* Similar in shape to *P. hilli*, though narrower (Figs. 1–4), without sharply pointed apex typical of many other species in the genus; ground color pale olive yellow; scales, two-toned with yellow tips and basally olive brown, with basal color taking up proportionally more of the scales in subterminal region; dusting of white scales throughout. Fringes yellow at wing edge, apically white. Maculation on FW as described above, with ST and PM lines always present (though PM can be quite faint); PM line angled toward apex of wing; AM line (when present) makes a "V" with PM line. In seven of eleven specimens, faint line joins PM line under reniform, continues along medial aspect of reniform up to costa, with this line and PM line forming a "y" (somewhat visible in Fig. 3). *Hindwing:* Ground color largely white basally, lightly dusted with olive-gray scales toward wing edge. Scales very fine and tightly pressed to wing; fringe scales long and white. Overall impression is HW lightly scaled, with venation quite visible, especially from underside.

Abdomen: Male *P. kathyae* with strongly sclerotized ridge on posterior edge of seventh tergum (somewhat visible in Fig. 3), and a small sclerotized U-shaped ridge on anterior edge of eighth tergum; otherwise as for genus.

Male genitalia (Figs. 7–8): very similar to *P. hilli* (Figs. 5–6) and other members of *Plagiomimicus*; valves symmetrical, broad, and rectangular, with visible ampulla (16% of length of valve); uncus as in *P. hilli*, thin, cylindrical; distal end pointed and reflected ventrally; tegumen arms broad, forming an inverted "V"; saccus narrowed near base where it joins vinculum; aedeagus long, thin (4.4× longer than width at apex); vesica without pronounced subbasal pouch, with large field of apical cornuti, and a row of very small cornuti basally (near apex of aedeagus), these two cornutal patches typical for genus (Poole 1995).

Female genitalia (Fig. 10): corpus bursae large and membranous, with a mesial constriction, posterior part sclerotized with short longitudinal ridges visible for a short distance anteriorly along corpus; ductus bursae lightly sclerotized; anterior apophyses long, extending to corpus; posterior apophyses 1 1/4 × longer; positioned farther back; papillae anales long and heavily sclerotized, tapering to a narrow, blunt tip.

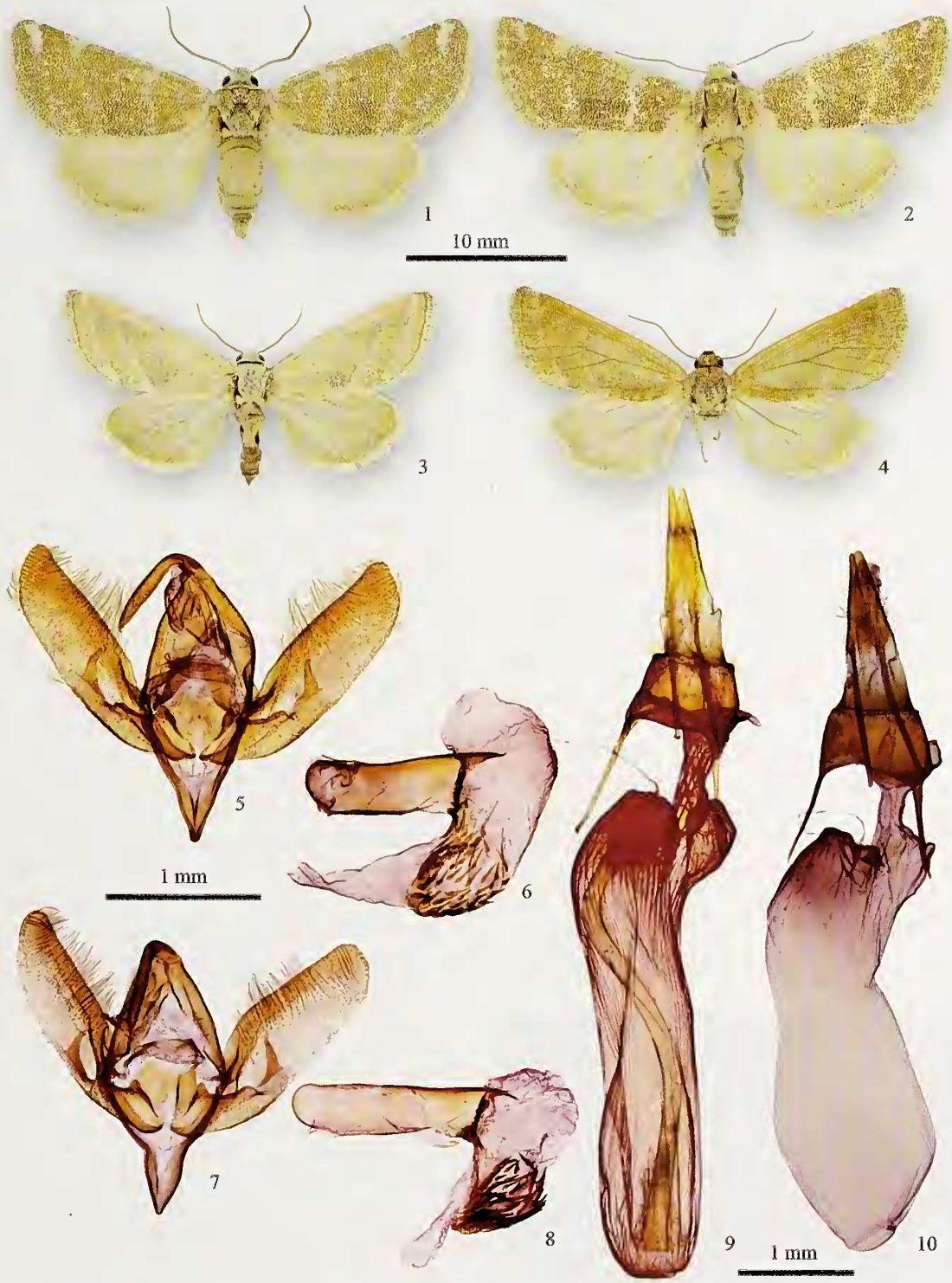
Type material: Holotype male (Fig. 4): **Arizona:** Coconino Co., Cameron (nr. Little Colorado River), at lights, 7 Sep. 1995, J. Adams (deposited in CNC). Paratypes (4 males, 6 females): **Arizona:** Same locality as holotype, 7 Sep. 1995 (2 males, 3 females) and 1 Sep. 1996 (1 male, 2 females); **Utah:** Grand Co., Moab, at lights, 5 Sep. 1995 (1 female) and 28 Aug. 1996 (1 male), J. Adams. The precise location for collection of the Arizona specimens is the Cameron Trading Post, Cameron, AZ, at 35° 52' 30" N, 111° 24' 47" W, just south of the Little Colorado River and just W of Hwy. 89. Paratypes deposited in CNC, personal collection of JKA, and USNM.

Etymology. The species is named in honor of the wife of JKA, Katherine Parker-Adams. This name is particularly appropriate as James and Kathy were on their honeymoon at the time of discovery of the first specimens in 1995.

Discussion

The genus *Plagiomimicus* Grote (Poole 1995) is a large genus of striiine noctuids, most of which are found in xeric habitats in western United States and northern Mexico. The pattern in adults of *Plagiomimicus* is typically subdued, with a light gray ground color in some, olive yellow, yellow gray or dark brown in others. One constant pattern element in virtually all species is a visible postmedian line on the forewings; other pattern elements (spots, bars, other lines) may be accentuated in some, completely absent in others. Another virtual constant is the late summer/early fall flight time. The genitalia (both male and female) are quite similar among species in the genus (including *P. kathyae*).

The known distribution for *Plagiomimicus kathyae* is currently defined by the two collection localities: Cameron, Coconino Co., Arizona, along the Little Colorado River east of the Grand Canyon, and Moab, Grand Co., Utah. It seems reasonable to assume that the species should be found in any appropriate habitat between the two locations, and possibly over a broader area in the southern Great Basin. The species appears to be a denizen of very dry scrub habitat, similar to *P. hilli*, which is found in the Mojave Desert region south and west of the range of *P. kathyae* (south-central Arizona to southern California; Poole 1995). The larva, as for many



FIGS. 1–10. **1**, *P. hilli*, male, Palm Springs, California, 22 Oct 1927, C. A Hill. **2**, *P. hilli*, female, Indio, California, 21 Oct 1921. **3**, *P. kathyae*, male holotype, Cameron, Coconino Co., Arizona, 7 Sept., 1995, James K. Adams. **4**, *P. kathyae*, female paratype, Cameron, Coconino Co., Arizona, 7 Sept., 1995, James K. Adams. **5**, *P. hilli*, male genital capsule, 19 mi W Blythe, Riverside Co., California, 10 Oct 1958, W. E. Ferguson. **6**, *P. hilli*, aedeagus and vesica. Same data as 5. **7**, *P. kathyae*, male genital capsule, Moab, Grand Co., Utah, 28 Aug. 1996, J. K. Adams. **8**, *P. kathyae*, aedeagus and vesica. Same data as 7. **9**, *P. hilli*, female genitalia, Hopkins Well, Riverside Co., California, 11 Oct 1958, W. E. Ferguson. **10**, *P. kathyae*, female genitalia, Cameron, Coconino Co., Arizona, 7 Sept., 1995, James K. Adams.

species in the genus, is unknown, but it would seem likely that the immatures of *P. kathyae* should feed on some plant species in the Asteraceae, because the known larvae of other species of *Plagiomimicus* (*P. spumosum* (Grote), *P. tepperi* (Morrison), *P. pityochromus* Grote, and *P. expallidus* Grote) all feed on species of plants in the Asteraceae (Poole 1995).

The flight time for the species is currently defined by the eleven collected specimens—August 28 – September 7. This flight time falls within the typical late summer flight time for many stiriine noctuids. Additional trips through the Moab and Cameron areas in early August have not resulted in collection of any more specimens, so it clearly begins its flight sometime in mid–late August. It is not known how late into September the species could be encountered.

The closest relative to *P. kathyae*, as already indicated, appears to be the similarly colored *P. hilli*. The genitalia (Figs. 5–10), of both male and female, are quite similar between the two species, and are rather typical for the genus *Plagiomimicus* (Poole 1995). As *P. hilli* is the apparent sister species for *P. kathyae*, and there are two records of *P. hilli* (in the CNC) from April, suggesting a spring brood, it could prove fruitful to search for *P. kathyae* in the spring months as well.

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